

# **EXHIBIT 40**

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN JOSE DIVISION

6 CISCO SYSTEMS, INC., )  
7 Plaintiff, )  
8 vs. ) Case No.:  
9 ARISTA NETWORKS, INC., )  
10 Defendant. )

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VIDEOTAPED DEPOSITION OF ABHAY ROY  
Palo Alto, California  
Friday, December 18, 2015  
Volume 1

21       Reported by:  
22       RACHEL FERRIER  
23       CSR No. 6948  
24       Job No. 2200521  
25       PAGES 1 - 232

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1           Obviously we are not going to stop the deposition 09:47AM  
2       so that this witness can review a 600-page document, but 09:47AM  
3       given that he and counsel are looking at it and at 09:47AM  
4       particular pages you want us to look at it one point in 09:48AM  
5       time out of context, we will object to all questions on 09:48AM  
6       that basis. 09:48AM

7           MR. SILBERT: Okay. Well, it's a Cisco document, 09:48AM  
8       and I'm about to ask him about a command listed here 09:48AM  
9       that he purports to be the author of. 09:48AM

10          Q     So if you look at page 29, do you have that in 09:48AM  
11       front of you? 09:48AM

12          A     Yeah, I have. 09:48AM

13          Q     Do you see, at the top of that page, there's a 09:48AM  
14       listing for "bfd all-interfaces," and then it says, in 09:48AM  
15       capitals, "IRI, RIP, IPV6"? 09:48AM

16          A     Yes, I do. 09:48AM

17          Q     My question is: What do those letters in 09:48AM  
18       capitals signify? 09:48AM

19          A     IRI, I can't tell you. RIP is -- is routing 09:48AM  
20       protocol. I think it's routing information protocol. 09:48AM  
21       IP Version 6 is probably Internet Protocol Version 6. 09:49AM

22          Q     Do you have an understanding as to why these 09:49AM  
23       indications are in all capitals? 09:49AM

24          A     So a lot of times we try to abbreviate things so 09:49AM  
25       that if the reader is reading the document and 09:49AM

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1 encounters a shorter version, they can expand it, and if 09:49AM  
2 RIP is used further down the document, you can keep 09:49AM  
3 saying router information protocol or you can shorthand 09:49AM  
4 it, and, typically, at the first documents, you will 09:49AM  
5 have both versions, which this is the shorthand for 09:49AM  
6 that. 09:49AM

7 Q Are these capitalized letters actually part of 09:49AM  
8 the CLI command or are they there for some different 09:49AM  
9 reason? 09:49AM

10 MR. NEUKOM: Objection; vague and compound. 09:49AM

11 THE WITNESS: I mean, just looking at this, it's 09:49AM  
12 hard to say. There's probably a more detailed document 09:49AM  
13 on this command that can probably tell us more. Just by 09:49AM  
14 looking at it, it's hard to say what it's trying to say. 09:50AM

15 BY MR. SILBERT: 09:50AM

16 Q You claim to be the person who authored the 09:50AM  
17 command "bfd all-interfaces"; correct? 09:50AM

18 MR. NEUKOM: Objection; misstates prior 09:50AM  
19 statements and calls for a legal conclusion. 09:50AM

20 THE WITNESS: So bfd all-interfaces is -- is -- 09:50AM  
21 looks like a broader implication for various protocols. 09:50AM  
22 My involvement has been on OSPF site, and I have written 09:50AM  
23 some code on OSPF, which makes use of bfd 09:50AM  
24 all-interfaces. 09:50AM

25 Is that what you are asking? 09:50AM

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1 BY MR. SILBERT: 09:50AM

2 Q Okay. Well, let me just understand. 09:50AM

3 Did -- is it true that you did not author the 09:50AM

4 command "bfd all-interfaces"? 09:50AM

5 MR. NEUKOM: Objection; calls for a legal 09:50AM

6 conclusion. 09:50AM

7 THE WITNESS: So bfd all-interfaces code I have 09:50AM

8 written for OSPF. 09:50AM

9 BY MR. SILBERT: 09:51AM

10 Q Okay. I'm sorry, did I -- were you finished? 09:51AM

11 A Yes. 09:51AM

12 Q Okay. Did you come up with the phrase 09:51AM

13 "bfd all-interfaces" or did someone else do that? 09:51AM

14 A So this is -- this is quite dated. My best 09:51AM

15 recollection is we actually looked at a variety of IPv6 09:51AM

16 protocols, and we were trying to figure out what could 09:51AM

17 be one of the -- one of the best ways to express this. 09:51AM

18 So this is more of a collaborative effort. I cannot 09:51AM

19 take credit of coming up with it. It's a team of 09:51AM

20 engineers actually who looked into it, how this fits 09:51AM

21 into the bigger -- bigger piece of organization of 09:51AM

22 commands, what makes sense, what is more aesthetically 09:51AM

23 correct in the -- in the correct scope and with the 09:51AM

24 choices we had and the team of engineers, I believe, who 09:51AM

25 came up with this. 09:51AM

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1 Q Okay. So if you can't take credit for coming up 09:51AM  
2 with the phrase "bfd all-interfaces," who, to your 09:51AM  
3 knowledge, on the team of engineers came up with that 09:52AM  
4 phrase? 09:52AM

5 MR. NEUKOM: Objection; misstates prior 09:52AM  
6 testimony. 09:52AM

7 THE WITNESS: Can't recollect exactly, was it one 09:52AM  
8 engineer or was it a bunch of proposals we had and we 09:52AM  
9 collectively said this -- this is the best thing to go 09:52AM  
10 with. 09:52AM

11 BY MR. SILBERT: 09:52AM

12 Q Okay. So you don't know who came up with the 09:52AM  
13 phrase "bfd all-interfaces"? 09:52AM

14 A I can't at this point, yeah. 09:52AM

15 Q Okay. But you do know, I believe you said, that 09:52AM  
16 when the team of engineers was working, doing the work 09:52AM  
17 that resulted in that phrase, they were consulting 09:52AM  
18 protocols or industry standards; correct? 09:52AM

19 MR. NEUKOM: Objection; misstates prior 09:52AM  
20 testimony. 09:52AM

21 THE WITNESS: So it's a team of engineers are 09:52AM  
22 typically looking at what is the best way to express a 09:52AM  
23 certain functionality, right? And they are trying to 09:52AM  
24 come up with the best possible command-line interface, 09:52AM  
25 and -- and we can get into sort of why and -- and what 09:52AM

1 is the process and so on, right? 09:53AM

2 In Cisco, there is -- there is a team of people 09:53AM

3 who are part of alias called "parser police." What they 09:53AM

4 do is if you want to write a new command, you send them 09:53AM

5 your proposal. They review it. They will tell you that 09:53AM

6 you are not going in the right direction, because they 09:53AM

7 are guiding the overall architecture purity. They are 09:53AM

8 giving you the overall choice on how to sort of design 09:53AM

9 such things. 09:53AM

10 What I was trying to say is the team of engineers 09:53AM

11 write proposals, send it to parser police, for example, 09:53AM

12 for their governance, and what finally gets decided, 09:53AM

13 again, among engineers and the governance party, is what 09:53AM

14 developers implement at the end of the day. 09:53AM

15 (Discussion off the stenographic record.) 09:53AM

16 BY MR. SILBERT: 09:53AM

17 Q Okay. Understanding that you didn't come up with 09:54AM

18 the phrase bfd all-interfaces, you are familiar with 09:54AM

19 that CLI command; correct? 09:54AM

20 A Yes, I am. 09:54AM

21 MR. NEUKOM: Objection; compound. 09:54AM

22 BY MR. SILBERT: 09:54AM

23 Q Would a -- strike that. 09:54AM

24 Is it -- I just want to use the correct 09:54AM

25 terminology. 09:54AM

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1           Would you say that it's system administrators who 09:54AM  
2 are entering CLI commands? Should we call them "users"? 09:54AM  
3 What would make the most sense? 09:54AM  
4           MR. NEUKOM: Objection to form. 09:55AM  
5           THE WITNESS: I mean, any person who wants to 09:55AM  
6 configure a device, so you could choose any language. 09:55AM  
7 You could choose a "user." You could choose "operator." 09:55AM  
8           MR. SILBERT: Okay. 09:55AM  
9           THE WITNESS: You could choose variety of 09:55AM  
10 different titles. 09:55AM  
11 BY MR. SILBERT: 09:55AM  
12 Q    Okay. If an operator wanted to enter this 09:55AM  
13 command, what would he or she actually type into the 09:55AM  
14 interface? 09:55AM  
15 A    So -- so when you -- 09:55AM  
16           MR. NEUKOM: Objection; vague. 09:55AM  
17           THE WITNESS: -- when you said "this command," 09:55AM  
18 you will have to be a little bit more explicit, right? 09:55AM  
19 because the document clearly says this command is 09:55AM  
20 applicable for variety of different technologies. 09:55AM  
21           So, first, you have to get to which technology 09:55AM  
22 are you talking about, and then how do you configure 09:55AM  
23 that, and how do you type in the right place. It's 09:55AM  
24 quite -- quite a bit to get to the question you are 09:55AM  
25 asking, that what will he type. 09:55AM

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1 BY MR. SILBERT: 11:19AM

2 Q What was your personal involvement, if any, in 11:19AM  
3 naming the "bfd all-interfaces" command? 11:19AM

4 A So I remember the implementation part of the 11:19AM  
5 command where I was a developer writing the code and 11:19AM  
6 implementing the command. 11:19AM

7 In the naming part, as I said, I don't quite 11:19AM  
8 recollect was it my idea or was it a collaborative idea 11:19AM  
9 which finally came to these exact choice of words, yeah, 11:19AM  
10 so I don't recall. Probably participated in the 11:19AM  
11 discussion of coming to this exact command syntax. 11:19AM

12 Q Okay. Where you say "probably participated in 11:19AM  
13 the discussion," do you have any recollection of 11:20AM  
14 participating in a discussion that came to this exact 11:20AM  
15 command syntax? 11:20AM

16 A Yeah, so no specific recollection. 11:20AM

17 Q Do you have a general recollection of 11:20AM  
18 participating in that discussion? 11:20AM

19 A The general recollection is, again, based on some 11:20AM  
20 of the earlier comments I made. The -- the way we 11:20AM  
21 actually design a new command is the team talks about 11:20AM  
22 it. The team brainstorms about it, and I was part of 11:20AM  
23 the team working at that time, so it will be hard to 11:20AM  
24 believe that I was hiding under the table not really 11:20AM  
25 doing anything, so I was probably participating. That's 11:20AM

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1 where the "probably" comes from. 11:20AM

2 Q Okay. But you don't have any actual image in 11:20AM

3 your head of those discussions; is that right? 11:20AM

4 A That's correct. 11:20AM

5 Q Okay. Why don't you go back to -- let's -- let's 11:20AM

6 look again at Exhibit 54, this table, and would you 11:20AM

7 please turn to page 12. 11:20AM

8 Do you see, a little more than midway down the 11:21AM

9 page, the Command Expression in the left-hand column 11:21AM

10 "ip ospf authentication"? 11:21AM

11 A Yeah, I see that. 11:21AM

12 Q Okay. And do you see the next column with the 11:21AM

13 heading "Author/Originator Information"? It says 11:21AM

14 "Cisco" and then your name? 11:21AM

15 A Yes, I see that. 11:21AM

16 Q Did you come up with the expression "ip ospf 11:21AM

17 authentication"? 11:21AM

18 A I'll probably give you a similar answer; that I 11:21AM

19 was part of the team who were working on it. Was this 11:21AM

20 purely me or was it a combined brainstorming with the 11:21AM

21 team, I don't have specific recollection. 11:21AM

22 Q Okay. And similar to the "bfd all-interfaces" 11:22AM

23 command that we discussed, do you have any knowledge of 11:22AM

24 what person or persons actually came up with the 11:22AM

25 expression "ip ospf authentication"? 11:22AM

1 MR. NEUKOM: Objection; asked and answered. 11:22AM  
2 THE WITNESS: Yeah, no specific names I can cite, 11:22AM  
3 but, again, this is similar to what I said. The team 11:22AM  
4 talks about it and comes up with the name. Who -- who 11:22AM  
5 seeded the word or part of the word and how we arrived 11:22AM  
6 at the final word, no specific recollection. 11:22AM  
7 BY MR. SILBERT: 11:22AM  
8 Q Okay. And, again, I -- I'm assuming this is 11:22AM  
9 true, but correct me if I'm wrong. 11:22AM  
10 You -- you have no image in your head of any 11:22AM  
11 discussions surrounding this particular term with 11:22AM  
12 respect to coming up with this expression? 11:23AM  
13 A That's correct, no specific recollection. 11:23AM  
14 Q Okay. What is the function of the command 11:23AM  
15 "ip ospf authentication"? 11:23AM  
16 A This command is at a -- at a interface level, if 11:23AM  
17 I remember, and what this does is if -- if two devices 11:23AM  
18 are talking OSPF, you can configure both devices to -- 11:23AM  
19 to do some level of encoding in the packets so that they 11:23AM  
20 can validate each other. There are different types of 11:23AM  
21 authentication. There is -- if I remember, again, 11:23AM  
22 correctly, there is a clear text authentication. There 11:23AM  
23 is a message digest -- digest authentication, and I 11:23AM  
24 think those are the -- those are the additional keywords 11:23AM  
25 associated with this command. 11:24AM

1 Q Okay. What's the significance of the term "ip" 11:24AM  
2 at the start of this command? 11:24AM  
3 A IP -- I think we -- we kept "ip" as the top-level 11:24AM  
4 keyword for things which were related to IP before, so 11:24AM  
5 "ip" really implies IP Version 4. 11:24AM  
6 Q Okay. And just to back up for a second, IP 11:24AM  
7 stands for Internet protocol; correct? 11:24AM  
8 A That is correct. 11:24AM  
9 Q And IPv4 stands for -- or refers to Version 4 of 11:24AM  
10 the Internet protocol; is that correct? 11:24AM  
11 A That is correct. That is correct. 11:24AM  
12 Q And the Internet protocol is specified in a 11:24AM  
13 standard published by the IETF; correct? 11:24AM  
14 A That it's correct. 11:24AM  
15 Q And IPv4 is specified in a standard published by 11:24AM  
16 the IP -- IETF; correct? 11:25AM  
17 A Yes, that's correct. 11:25AM  
18 Q Okay. The acronym IP was used by the industry to 11:25AM  
19 refer to Internet protocol before Cisco used it in CLI 11:25AM  
20 commands; correct? 11:25AM  
21 MR. NEUKOM: Objection; foundation. 11:25AM  
22 THE WITNESS: So the term "IP," just like we 11:25AM  
23 discussed for BFD -- right? -- when you write Internet 11:25AM  
24 standard, you try to abbreviate technologies, and, 11:25AM  
25 again, we can look at that document and confirm that's 11:25AM

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1 true or not. I'm guessing it says Internet protocol and 11:25AM  
2 that abbreviates it as "IP," and the document refers to 11:25AM  
3 that so that you don't have to keep saying "Internet 11:25AM  
4 protocol" or "Internet Protocol Version 4." 11:25AM

5 MR. NEUKOM: By the way, David, while you are 11:26AM  
6 getting a new document, just as a housekeeping matter, 11:26AM  
7 30 minutes or so ago I objected to a question you asked 11:26AM  
8 the witness on the basis of attorney-client privilege, 11:26AM  
9 and I meant to have objected on the basis of attorney 11:26AM  
10 work product. 11:26AM

11 MR. SILBERT: Okay. 11:26AM

12 MR. NEUKOM: So. 11:26AM

13 BY MR. SILBERT: 11:26AM

14 Q This is -- let me show you a document that's 11:26AM  
15 already been marked as Exhibit 29 in this case. 11:26AM

16 Do you recognize this document? 11:26AM

17 A Yes, I do. 11:27AM

18 Q What is it? 11:27AM

19 A This is an RFC which details the Internet 11:27AM  
20 protocol. 11:27AM

21 Q And the publication date shown here is 11:27AM  
22 September 1981; correct? 11:27AM

23 A Yes, that is correct. 11:27AM

24 Q And was this, to your knowledge, the first 11:27AM  
25 version of the Internet protocol that's described in 11:27AM

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1 this document, Exhibit 29? 11:27AM

2 MR. NEUKOM: Objection; foundation. 11:27AM

3 THE WITNESS: So I'm just reading page 1 -- or 11:27AM

4 what you have in your bottom as 1557. Just below the 11:27AM

5 RFC 791, it says, Replaces RFC 760, which generally 11:27AM

6 implies there was prior work, which -- which his 11:27AM

7 supersedes. 11:27AM

8 BY MR. SILBERT: 11:28AM

9 Q Okay. And forgive me if I've asked you this -- 11:28AM

10 (Discussion off the stenographic record.) 11:28AM

11 BY MR. SILBERT: 11:28AM

12 Q I apologize if I've asked you this already, but 11:28AM

13 have -- have you heard the Internet protocol abbreviated 11:28AM

14 IP outside the context of Cisco? 11:29AM

15 A As in what are the other possible abbreviations? 11:29AM

16 For example, intellectual property we use "IP" term all 11:29AM

17 the time. 11:29AM

18 Q We do that too. No. 11:29AM

19 My question is: Have you heard the abbreviation 11:29AM

20 IP used to refer to the Internet protocol outside the 11:29AM

21 context of Cisco? 11:29AM

22 MR. NEUKOM: Objection; vague. 11:29AM

23 THE WITNESS: So in -- in IETF -- as part of my 11:29AM

24 role in IETF, people do loosely refer Internet Protocol 11:29AM

25 Version 6 as "IP," as -- as one -- one of the variants. 11:29AM

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1 sit here today, of who else was on the team that came up 12:35PM  
2 with the command "ip ospf authentication"? 12:35PM  
3 A Yes. 12:35PM  
4 Q Okay. Who else was on the team that came up with 12:35PM  
5 the command "bfd all-interfaces"? 12:35PM  
6 A That was on page 3? 12:35PM  
7 Q Correct. 12:35PM  
8 MR. NEUKOM: Page 3 of Exhibit 54. 12:35PM  
9 THE WITNESS: This is actually much later than 12:36PM  
10 that, so this -- I'm just going with the date, which is 12:36PM  
11 also listed here, 2004 to 2005. We had different 12:36PM  
12 engineers around that time on those PF [phonetic] team. 12:36PM  
13 Couple names I can recollect. One was Liem, L-i-e-m, 12:36PM  
14 and Nguyen, N-g-y-u-e-n, I think. Last name may have 12:36PM  
15 spelled incorrectly. Another engineer was Peter, 12:36PM  
16 P-e-t-e-r, Psenak, P-s-e-n-a-k. There are probably more 12:36PM  
17 names, but those are a couple of names. 12:37PM  
18 BY MR. SILBERT: 12:37PM  
19 Q Okay. Are you able to tell me any other names of 12:37PM  
20 people who are on the team who named the command 12:37PM  
21 "bfd all-interfaces"? 12:37PM  
22 A Yeah, I don't recall any more specific names. I 12:37PM  
23 mean, there are people around that time, but I want to 12:37PM  
24 make sure that they were in Cisco at that time. 12:37PM  
25 For example, there is one engineer called Acee, 12:37PM

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1 A-c-e-e, Lindem, L-i-n-d-e-m, but I'm not 100 percent 12:37PM  
2 sure if he was still on that team or he left Cisco by 12:37PM  
3 that time. 12:37PM

4 Q Okay. Can you remember any other names of people 12:37PM  
5 who were on the team? 12:37PM

6 A Nothing is coming to my head. 12:37PM

7 Q Okay. Referring back to Exhibit 54, would you 12:38PM  
8 please turn to page 12. 12:38PM

9 A Yeah, I'm there. 12:38PM

10 Q In the bottom third of the page, do you see the 12:38PM  
11 command expression "ip ospf bfd"? 12:38PM

12 A Yes. 12:38PM

13 Q Okay. And then in the next column with the 12:38PM  
14 heading "Author/Originator Information," it says "Cisco" 12:38PM  
15 and your name; correct? 12:38PM

16 A Yes. 12:38PM

17 Q Did you come up with the expression "ip ospf 12:38PM  
18 bfd"? 12:38PM

19 A Yeah, so BFD -- I was the lead implementer of it 12:38PM  
20 and very likely I proposed the -- the command. 12:39PM

21 Q Okay. And you say very likely you proposed the 12:39PM  
22 command. 12:39PM

23 Do you have any recollection of doing that? 12:39PM

24 A I don't remember anybody else worked on it, so 12:39PM  
25 I -- I proposed the command. Yeah, I think I proposed 12:39PM

1 the command. I don't think there was anybody else on 12:39PM  
2 this project. 12:39PM

3 Q Okay. And I appreciate your reasons for saying 12:39PM  
4 that, but my question is: Do you have any recollection 12:39PM  
5 of proposing this command "ip ospf bfd"? 12:39PM

6 A Yes. 12:39PM

7 MR. NEUKOM: Objection; asked and answered. 12:39PM

8 BY MR. SILBERT: 12:39PM

9 Q What's your recollection? 12:39PM

10 A I remember the document which described this, and 12:39PM  
11 I think I was -- I was the author of the document. It's 12:39PM  
12 a small amount of work. And generally what happens is 12:39PM  
13 if there is large project, you have a larger group of 12:39PM  
14 people who work on the project. For smaller ones, you 12:40PM  
15 are the sole implementer, so you pretty much do most of 12:40PM  
16 the work, all the way from designing the command and the 12:40PM  
17 implementation. This was another smaller features. 12:40PM

18 Q Okay. The term "ip" in the command "ip ospf bfd" 12:40PM  
19 refers to the Internet protocol standard that's 12:40PM  
20 specified by the IETF; correct? 12:40PM

21 A "ip" in this command refers to Internet Protocol 12:40PM  
22 Version 4, which is documented in RFC 791, and there 12:40PM  
23 might be further revisions of it, if not. 12:40PM

24 Q Okay. And the term "ospf" in the command 12:40PM  
25 "ip ospf bfd" refers to the OSPF standard that's 12:40PM

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1	specified by the IETF; correct?	12:40PM
2	A Yes.	12:40PM
3	MR. NEUKOM: Objection; misstates prior	12:41PM
4	testimony, calls for opinion.	12:41PM
5	THE WITNESS: The OSPF acronym we have used is	12:41PM
6	for Open Shortest Path First protocol, which is also	12:41PM
7	described and captured in RFC.	12:41PM
8	BY MR. SILBERT:	12:41PM
9	Q Okay. And the -- the term "bfd" in the command	12:41PM
10	"ip ospf bfd" refers to the BFD standard that's	12:41PM
11	specified by the IETF; correct?	12:41PM
12	A BFD acronym stands for Bidirectional Forwarding	12:41PM
13	Detection, which is -- which is, yes, also captured in	12:41PM
14	IETF RFC.	12:41PM
15	Q And the BFD standard itself describes using BFD	12:41PM
16	with OSPF; is that correct?	12:41PM
17	MR. NEUKOM: Objection; document calls for its --	12:41PM
18	pardon me. Document speaks for itself, calls for	12:42PM
19	opinion testimony.	12:42PM
20	THE WITNESS: BFD spec -- again, my recollection	12:42PM
21	is BFD spec was written in a more generic sense. It may	12:42PM
22	or may not have explicitly called out how and which	12:42PM
23	protocols you can -- you can make use of it, but, again,	12:42PM
24	if you have some more text, I can look into it.	12:42PM
25	//	12:42PM

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1           THE WITNESS: Okay. I mean, from -- I mean, this 12:48PM  
2       is probably a more broader comment. I don't recall 12:48PM  
3       seeing any specifics of what command somebody should 12:48PM  
4       implement. They typically talk about the customer wants 12:48PM  
5       to get this functionality, not how Cisco should 12:48PM  
6       implement from the CLI perspective. That will be rare 12:48PM  
7       if somebody even ventures into that. 12:48PM

8       BY MR. SILBERT: 12:48PM

9       Q     Are you aware of Cisco customers providing any 12:49PM  
10      feedback on CLI commands? 12:49PM

11      MR. NEUKOM: Same objections; vague, compound. 12:49PM

12      THE WITNESS: I'm not aware of anything in 12:49PM  
13      particular. 12:49PM

14      BY MR. SILBERT: 12:49PM

15      Q     Are you aware of anything in general? 12:49PM

16      A     We do something called "early field trial," which 12:49PM  
17      typically happens if a new product goes out or a new 12:49PM  
18      software release goes out. Customers will typically try 12:49PM  
19      your functionality and give you feedback in terms of how 12:49PM  
20      they want to change the functionality, if it is not 12:49PM  
21      meeting their exact functional needs. So we get 12:49PM  
22      feedbacks on -- on that type of thing; that, "I asked 12:49PM  
23      you to do this, but your thing is doing slightly 12:49PM  
24      different. Can you change the behavior of that?" 12:49PM

25           Command line kind of thing, customers don't care. 12:49PM

1 They don't want to get into. Cisco does what Cisco 12:49PM  
2 does. 12:50PM

3 Q Okay. Let's go back to Exhibit 54, and could you 12:50PM  
4 please turn to page 16. 12:50PM

5 Do you see the command "IPv6 ospf area"? It's 12:50PM  
6 third from the bottom. 12:50PM

7 A Yes. 12:50PM

8 Q And you are indicated as the author, slash, 12:50PM  
9 originator with respect to that command; is that 12:50PM  
10 correct? 12:50PM

11 A Yes. 12:50PM

12 Q Did you come up with the expression "IPv6 ospf 12:50PM  
13 area"? 12:50PM

14 A Yes. So -- yes. I mean, the answer is yes. 12:50PM

15 Q You, personally, did that, or you were part of a 12:50PM  
16 team that did that? 12:50PM

17 A So that's what I was thinking. It was -- it was 12:51PM  
18 a set of people, but I was the lead developer, so I 12:51PM  
19 wrote the initial functional spec, initial design and 12:51PM  
20 initial user interface, but there were different 12:51PM  
21 implementer -- implementers who were part of the 12:51PM  
22 project, so they helped code it, basically. 12:51PM

23 Q Okay. And do you know whether, in the initial 12:51PM  
24 functional spec and design and user interface, the 12:51PM  
25 command that you proposed was "IPv6 ospf area" versus 12:51PM

1 some other command? 12:51PM

2 MR. NEUKOM: Objection; vague and compound. 12:51PM

3 THE WITNESS: I don't recall if we -- if we ever 12:51PM

4 had multiple iterations on this particular command. In 12:51PM

5 the slightly longer context is OSPF Version 3 was 12:52PM

6 inspired and seeded with some of the same concepts we 12:52PM

7 had in OSPF Version 2, so when we designed the CLI, it 12:52PM

8 was actually more to align how OSPF Version 2 things are 12:52PM

9 structured and -- yeah. 12:52PM

10 BY MR. SILBERT: 12:52PM

11 Q So -- right. 12:52PM

12 What -- tell me why you are referring to OSPF 12:52PM

13 Version 3? 12:52PM

14 A So IPv6 OSPF is -- is what is referred to as OSPF 12:52PM

15 Version 3. So, again, the longer story there is OSPF 12:52PM

16 had a first version -- I should say second version, OSPF 12:52PM

17 second -- Version 2 was the real version which most 12:52PM

18 people actually implemented and deployed. That only 12:52PM

19 supported IP Version 4 prefix routing. 12:52PM

20 When IP Version 6 became popular, OSPF had to 12:53PM

21 reinvent itself, and OSPF Version 3 came along, which is 12:53PM

22 a separate Internet -- Internet RFC, right? 12:53PM

23 So if you look at RFC OSPF Version 3, it came 12:53PM

24 later when IPv6 work was happening. So if you see 12:53PM

25 things which are referred to IPv6 OSPF, they are 12:53PM

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1 referring to OSPF Version 3. We could have chosen to 12:53PM  
2 call it OSPFv3, or OSPF Version 3. We chose to call it 12:53PM  
3 IPv6 OSPF in our command syntax. 12:53PM  
4 Q So before you named the IPv6 OSPF area command, 12:53PM  
5 Cisco already used a command with a name "ip ospf area"; 12:53PM  
6 correct? 12:53PM  
7 A That is correct. 12:53PM  
8 Q Okay. 12:53PM  
9 A And "ip ospf" there referred to OSPF Version 2. 12:53PM  
10 Q Right. 12:53PM  
11 And IPv6 refers to Version 6 of the IP protocol; 12:53PM  
12 correct? 12:54PM  
13 A IP version -- yes. IPv6 refers to Version 6 of 12:54PM  
14 the IP protocol, which is a different Internet RFC. 12:54PM  
15 Q Right. 12:54PM  
16 And -- and in that RFC -- and I'm happy to show 12:54PM  
17 it to you if you want -- the -- it uses -- that RFC uses 12:54PM  
18 the acronym IPv6; correct? 12:54PM  
19 A I don't recall if it does or does not. 12:54PM  
20 (Exhibit 58 was marked for 12:54PM  
21 identification by the Court Reporter.) 12:54PM  
22 BY MR. SILBERT: 12:54PM  
23 Q Mr. Roy, would you please look at Exhibit 58 and 12:55PM  
24 tell me if you recognize it. 12:55PM  
25 A Yes, I do. 12:55PM

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1 different RFC, which is the OSPF Version 3 RFC, but if 12:57PM  
2 you just told me "OSPF," I would have interpreted it as 12:57PM  
3 you mean OSPF Version 2, which is a different RFC, just 12:57PM  
4 for semantics. 12:57PM

5 Q Understood, and you explained to me previously 12:57PM  
6 that the reason OSPF Version 3 was developed was to 12:57PM  
7 accommodate IPv6; correct? 12:57PM

8 A That's correct. 12:57PM

9 Q Okay. And we may have discussed this earlier, 12:57PM  
10 but area is a parameter that's introduced in the OSPF 12:57PM  
11 specification; correct? 12:57PM

12 A Area is a collection or a cluster of devices. 12:57PM  
13 That concept does exist in -- in the RFCs, yes. 12:57PM

14 Q Okay. And the RFCs refer to it as "area"; right? 12:57PM

15 A RFC documents does use the word "area," yes. 12:57PM

16 Q Okay. Is it a fair statement that when you came 12:58PM  
17 up with the command "ipv6 ospf area," what you did was 12:58PM  
18 refer to the pre-existing command "ip ospf area" and 12:58PM  
19 changed the "ip" to "ipv6" because you were now dealing 12:58PM  
20 with the IP Version 6? 12:58PM

21 MR. NEUKOM: Objection; vague and compound. 12:58PM

22 THE WITNESS: So we looked at -- we looked at 12:58PM  
23 what is existing in -- in Cisco IOS implementation, and 12:58PM  
24 that, generally, is one of the overriding things; that 12:58PM  
25 don't reinvent the wheel. If there is something which 12:58PM

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1	is done, go with it.	12:58PM
2	Some of the other ways to do that could be, you	12:58PM
3	could just say "ospfv3 area." We chose to call it "ipv6	12:58PM
4	ospf area."	12:59PM
5	BY MR. SILBERT:	12:59PM
6	Q And -- and did you model the command "ipv6 ospf	12:59PM
7	area" on the pre-existing command "ip ospf area"?	12:59PM
8	MR. NEUKOM: Objection; vague.	12:59PM
9	THE WITNESS: The pre-existence of "ip ospf area"	12:59PM
10	was a strong motivator for us to converge on this	12:59PM
11	choice.	12:59PM
12	BY MR. SILBERT:	12:59PM
13	Q Okay. Who else was on the team that -- I mean, I	12:59PM
14	understand you are saying you -- you did come up with	12:59PM
15	this command, but who else was on the team with you at	12:59PM
16	the time you came up with this command? And by "this	12:59PM
17	command," I'm referring to "ipv6 ospf area."	12:59PM
18	A I think there were multiple engineers. I can't	12:59PM
19	recollect the exact names at this point.	01:00PM
20	Q Okay. Let's move on.	01:00PM
21	Do you still have page 16 of Exhibit 54 in front	01:00PM
22	of you?	01:00PM
23	A Yes, I do.	01:00PM
24	Q Next is "ipv6 ospf cost."	01:00PM
25	Do you see that, second from the bottom?	01:00PM

1	A Yes, I do.	01:00PM
2	Q And, again, you are indicated as the author,	01:00PM
3	slash, originator with respect to that command	01:00PM
4	expression.	01:00PM
5	Do you see that?	01:00PM
6	A Yes.	01:00PM
7	MR. NEUKOM: Objection; misstates --	01:00PM
8	mischaracterizes the document.	01:01PM
9	BY MR. SILBERT:	01:01PM
10	Q Okay. You and Cisco are indicated as the author,	01:01PM
11	slash, originator; is that correct?	01:01PM
12	A Yeah, that's correct.	01:01PM
13	Q And did you come up with the expression "ipv6	01:01PM
14	ospf cost"?	01:01PM
15	A Yeah, it's the same. If you see the document,	01:01PM
16	which it lists the EK number, it's part of the same	01:01PM
17	document, so this and anything which talks about IPv6	01:01PM
18	OSPF is all part of sort of one development deferred,	01:01PM
19	and all those commands pretty much follow the same	01:01PM
20	paradigm.	01:01PM
21	But to answer your specific question, yes, I	01:01PM
22	wrote that document and pretty much came up with the	01:01PM
23	whole IPv6 OSPF command set.	01:01PM
24	Q And we can go through these one by one, and I	01:01PM
25	suspect we will, but isn't it true that for every	01:01PM

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1 command for which your name appears in the 01:01PM  
2 author/originator column that starts with "ipv6," that 01:02PM  
3 command is identical to a pre-existing command, with the 01:02PM  
4 only difference that the pre-existing command used "ip" 01:02PM  
5 instead of "ipv6"? 01:02PM

6 MR. NEUKOM: Objection; vague, compound. 01:02PM

7 THE WITNESS: So I'll have to see the -- the 01:02PM  
8 complete list of commands to make that statement. I'm 01:02PM  
9 not sure if this has the complete list, but if you have 01:02PM  
10 the both -- the command set -- 01:02PM

11 BY MR. SILBERT: 01:02PM

12 Q Well, you do have it in front of you in this 01:02PM  
13 large document, but I don't know that it's the best use 01:02PM  
14 of our collective time to -- for you to go point by 01:02PM  
15 point. 01:02PM

16 A Sure. 01:02PM

17 Q With respect to specifically the command "ipv6 01:02PM  
18 ospf cost," did you model that on a pre-existing command 01:02PM  
19 used at Cisco, "ip ospf cost"? 01:02PM

20 A Yes, that is correct. 01:03PM

21 Q Okay. And in the command, "ipv6" refers to 01:03PM  
22 Version 6 of the IP standard that's specified by the 01:03PM  
23 IETF; correct? 01:03PM

24 A Correct. "ipv6" refers to Internet Protocol 01:03PM  
25 Version 6 as specified in the RFC. 01:03PM

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1       that. 01:28PM

2       Q    Was it one of the main reasons or the dominant 01:28PM

3       reason? 01:28PM

4       A    Main reason, dominant reason, same thing in my 01:28PM

5       mind. 01:28PM

6       Q    Okay. But was it one of, or was it the dominant 01:28PM

7       reason? 01:28PM

8            MR. NEUKOM: Objection; asked and answered. 01:28PM

9            THE WITNESS: Yeah, this was the dominant reason. 01:28PM

10          BY MR. SILBERT: 01:28PM

11        Q    Okay. And in the command "ipv6 ospf 01:28PM

12       transmit-delay," "ipv6" refers to Internet Protocol 01:28PM

13       Version 6 as specified by IETF; correct? 01:28PM

14       A    That is correct. 01:29PM

15       Q    And in the command "IPv6 ospf transmit-delay," 01:29PM

16       "ospf" refers to OSPF Version 3 as specified by the 01:29PM

17       IETF; correct? 01:29PM

18       A    That is correct. 01:29PM

19       Q    And transmit delay is a parameter that's 01:29PM

20       described in the OSPF standard; is that correct? 01:29PM

21       A    So I found you the text in the Exhibit 56. Just 01:29PM

22       below the Rxmt, there is something called InfTransDelay. 01:29PM

23       This transmit delay refers to that. 01:29PM

24            MR. SILBERT: Right. 01:29PM

25            Okay. Why don't we take a break. 01:29PM

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1 THE VIDEOGRAPHER: Going off the record, the time 01:29PM  
2 is 1:29. 01:29PM  
3 (Recess taken.) 01:30PM  
4 THE VIDEOGRAPHER: Back on the record, the time 01:41PM  
5 is 1:41. 01:41PM  
6 Please continue. 01:41PM  
7 BY MR. SILBERT: 01:41PM  
8 Q Mr. Roy, would you please turn to page 19 of 01:41PM  
9 Exhibit 54. 01:41PM  
10 11 Do you see, about midway down that page, the 01:41PM  
12 command expression "log-adjacency-changes"? 01:41PM  
13 A Yes, I do. 01:41PM  
14 Q Did you come up with that command expression? 01:41PM  
15 A Yes, I did. 01:41PM  
16 Q What is the function of this command? 01:42PM  
17 A So OSPF protocol, one part of the protocol 01:42PM  
18 machinery is trying to figure out if two devices are 01:42PM  
19 talking to each other. We can discover, find each 01:42PM  
20 other, and if something goes wrong, there is a state 01:42PM  
21 machine which describes how we become what is known as 01:42PM  
22 "adjacent." It's a term in the RFC. 01:42PM  
23 The log-adjacency-changes is trying to log any 01:42PM  
24 and all events which leads to a successful adjacency or 01:42PM  
25 peering formation. If you enable this command, you 01:42PM

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1 will -- you will see things which are getting logged on 01:42PM  
2 a console or other ways you can collect logs, so that is 01:42PM  
3 that functionality. 01:42PM  
4 Q And -- thank you. That's helpful. 01:42PM  
5 In prior versions of this document, Exhibit 54, 01:43PM  
6 Cisco said that somebody named Valerie Swisher came up 01:43PM  
7 with this command expression. 01:43PM  
8 Do you know Valerie Swisher? 01:43PM  
9 A I don't remember. 01:43PM  
10 Q Don't remember ever meeting her? 01:43PM  
11 A I mean, the name rings a bell, but I don't know 01:43PM  
12 who this person is. Again, this is probably quite 01:43PM  
13 dated. 01:43PM  
14 Q Did she work on your team at any time? 01:43PM  
15 A Not in the OSPF team I was, not to the best of my 01:43PM  
16 recollection. 01:43PM  
17 Q Did you model the "log-adjacency-changes" command 01:43PM  
18 on a pre-existing command? 01:43PM  
19 A To the best of my recollection, there was nothing 01:43PM  
20 similar to this. This was very specific requirement for 01:44PM  
21 link-state protocols, and I don't believe there was 01:44PM  
22 any -- any other protocol which was making use of this. 01:44PM  
23 Again, to the best of my recollection. 01:44PM  
24 Q Okay. And -- still looking at Exhibit 54, do you 01:44PM  
25 see the column "Date of Earliest Known Document," and it 01:44PM

1	says "October 12, 1998."	01:44PM
2	Do you see that?	01:44PM
3	A Yes, I do.	01:44PM
4	Q Is that -- to the best of your recollection,	01:44PM
5	coincide with approximately the time that you came up	01:44PM
6	with this command expression?	01:44PM
7	A Yes, that's roughly when it was.	01:44PM
8	MR. SILBERT: Okay. Let me show you the document	01:44PM
9	I was referring to and see if you can shed any light on	01:44PM
10	it, my prior question.	01:44PM
11	(Exhibit 59 was marked for	01:45PM
12	identification by the Court Reporter.)	01:45PM
13	MR. NEUKOM: What exhibit number is this one?	01:45PM
14	MR. SILBERT: 59.	01:45PM
15	THE WITNESS: 59.	01:45PM
16	BY MR. SILBERT:	01:45PM
17	Q Mr. Roy, have you seen Exhibit 59 before?	01:45PM
18	A I have seen some version of OSPF command	01:45PM
19	reference. I don't know which version this refers to,	01:45PM
20	but I've seen some version of OSPF command reference,	01:45PM
21	yes.	01:45PM
22	Q Okay. And whether or not you saw this specific	01:45PM
23	version before, what -- what is this document, to the	01:45PM
24	best of your understanding?	01:45PM
25	A This document lists -- lists some of the OSPF	01:45PM

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1       thing that the operator typed with the command that we           02:06PM  
2       have just been talking about that you implemented in           02:06PM  
3       1998; correct?   02:06PM  
4            MR. NEUKOM: Objection; vague.                           02:06PM  
5            THE WITNESS: Those are two different contexts.       02:06PM  
6            The previous command we were talking about was in   02:06PM  
7       router OSPF Version 2 routing context.                      02:06PM  
8            The OSPF Version 3 one is in router OSPFv3          02:06PM  
9       routing context.   02:06PM  
10          Those are two different contexts, but they are       02:06PM  
11       both global routing contexts for two different protocols 02:06PM  
12       called OSPF Version 2 and OSPF Version 3, if that makes 02:06PM  
13       sense.   02:06PM  
14          MR. SILBERT: Yeah, I think it does.                   02:06PM  
15          Q     So your -- what you determined in 2001 was to use 02:06PM  
16       the same command for OSPF Version 3 that was already   02:06PM  
17       being used for OSPF Version 2; is that right?          02:06PM  
18          A     Yes. I think we have discussed this a few times. 02:06PM  
19          We try to keep it as aligned as close to our        02:07PM  
20       prior work. OSPF Version 2 was our prior work, and we   02:07PM  
21       were working on OSPF Version 3. We kept that as the     02:07PM  
22       dominant guiding force for most of the stuff, unless   02:07PM  
23       there was really a need to depart from it, so this will 02:07PM  
24       fall under the same premise.                                02:07PM  
25          Q     All right. So this was another example where you 02:07PM

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1 modeled the command "log-adjacency-changes" for OSPF 02:07PM  
2 Version 3 on the pre-existing "log-adjacency-changes" 02:07PM  
3 command that was used with OSPF Version 2? 02:07PM  
4 A That is correct. 02:07PM  
5 Q Okay. We are getting through it. 02:07PM  
6 Could you go to the next page, please. 02:07PM  
7 A 20? 02:07PM  
8 Q Yes, page 20. 02:07PM  
9 Okay. Do you see the command "maximum-paths" and 02:08PM  
10 then, parentheses, OSPF Version 3? 02:08PM  
11 A Yes. 02:08PM  
12 Q Okay. And did you come up with that command 02:08PM  
13 expression in around 2001? 02:08PM  
14 A Yes. 02:08PM  
15 Q Okay. And, again, the -- the parentheses here 02:08PM  
16 indicate that the operator enters this command in the -- 02:08PM  
17 is it OSPF router configuration context? Is that 02:08PM  
18 correct? 02:08PM  
19 A OSPF Version 3 router configuration context. 02:08PM  
20 Q Thank you. 02:08PM  
21 Now, if I look immediately above that row in -- 02:08PM  
22 on page 20, there's the command expression 02:08PM  
23 "maximum-paths" without the OSPFv3 in parentheses. 02:08PM  
24 Do you see that? 02:08PM  
25 A Yes, I see. 02:08PM

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1 Q And was that a command that was used in the OSPF 02:08PM  
2 Version 2 context? 02:09PM

3 A I mean, without looking at specific context, it's 02:09PM  
4 hard to say. 02:09PM

5 Q Okay. 02:09PM

6 A It doesn't imply which context this might be. 02:09PM  
7 This might be multiple contexts. 02:09PM

8 Q Okay. According to this document, you were not 02:09PM  
9 the person who came up with the "maximum-paths" command 02:09PM  
10 that doesn't have the OSPFv3 in parentheses; correct? 02:09PM

11 A Right. The one prior to the OSPFv3 one was not 02:09PM  
12 created by me. 02:09PM

13 Q It was created, according to this document, by 02:09PM  
14 someone named Anthony Li in or around July of 1995; is 02:09PM  
15 that right? 02:09PM

16 A That's what this document seems to imply, yes. 02:09PM

17 Q Okay. Do you know Mr. Li? 02:09PM

18 A Yes, Tony, Tony Li. 02:10PM

19 Q Do you know, is he still at Cisco? 02:10PM

20 A Tony is no longer with Cisco. 02:10PM

21 Q Okay. When you came up with the expression 02:10PM  
22 "maximum-paths" in the OSPFv3 context, did you model it 02:10PM  
23 after the pre-existing command "maximum-paths" that was 02:10PM  
24 used since approximately 1995? 02:10PM

25 A Yes. That was the dominant decision-maker. 02:10PM

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1 Q Okay. Again, I think some of these your 02:10PM  
2 testimony may be similar, but we'll -- we'll go through 02:10PM  
3 all of them. 02:10PM  
4 Could you please turn to page 22 of Exhibit 54. 02:10PM  
5 A Yes. 02:11PM  
6 Q Okay. And, again, just below -- halfway down the 02:11PM  
7 page, do you see the entry for "passive-interface" 02:11PM  
8 (OSPFv3)? 02:11PM  
9 A Yes, I do. 02:11PM  
10 Q And did you come up with that expression around 02:11PM  
11 August of 2001? 02:11PM  
12 A Yes, I did. 02:11PM  
13 Q And, again, if you look immediately above that 02:11PM  
14 row on the table, there's the expression 02:11PM  
15 "passive-interface." 02:11PM  
16 Do you see that? 02:11PM  
17 A Yes. 02:11PM  
18 Q And according to this document, the 02:11PM  
19 author/originator was Cisco, slash, Kirk -- is it 02:11PM  
20 pronounced "Lougheed" or -- 02:11PM  
21 A "Lougheed." 02:11PM  
22 Q "Lougheed"? 02:11PM  
23 A Mm-hmm. 02:11PM  
24 MR. NEUKOM: "Lougheed." 02:11PM  
25 MR. SILBERT: "Lougheed"? 02:11PM

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1	Q -- in around April of 1989.	02:11PM
2	Do you see that?	02:11PM
3	A Yes, I do.	02:11PM
4	Q So when you came up with the expression	02:11PM
5	"passive-interface" in the OSPFv3 context, did you model	02:12PM
6	it after the pre-existing command "passive-interface"	02:12PM
7	that was used, apparently, since approximately 1989?	02:12PM
8	A Yeah, that was, again, the dominant	02:12PM
9	decision-maker for us.	02:12PM
10	Q Okay. And if you would turn, please, to page 24	02:12PM
11	of Exhibit 54, do you see the command expression	02:12PM
12	"router-id (OSPFv3)"?	02:12PM
13	A Yes, I do.	02:12PM
14	Q Did you come up with that expression in around	02:12PM
15	July of 2007 -- excuse me, 2011?	02:12PM
16	A 2011. Do we have -- do we have any document	02:13PM
17	which has that date? Do we have anything, or is that a	02:13PM
18	typo?	02:13PM
19	Q Oh, versus 2001?	02:13PM
20	A Yeah, possibly.	02:13PM
21	Q Yeah, I'll just -- I don't know the answer, but	02:14PM
22	since you are questioning it, I'll just point out that	02:14PM
23	on page 22, for "passive-interface" that we were just	02:14PM
24	looking at, it appears to be the same earliest-known	02:14PM
25	document. It's got the same Bates number, and the date	02:14PM

1 there is August 31, 2001. Here it's July 25, 2011. I 02:14PM  
2 don't know the significance of that, but -- 02:14PM  
3 A So for -- for dates like this, I think the 02:14PM  
4 best -- best way to find out is EDCS has a history of 02:14PM  
5 when the documents are checked in, and that's probably 02:14PM  
6 the most reliable source to say what is exact date. 02:15PM  
7 Q Okay. So leaving aside the date, did you come up 02:15PM  
8 with the command expression "router-id" in the OSPFv3 02:15PM  
9 context? 02:15PM  
10 A Yes, I did. 02:15PM  
11 Q And, again, if you look immediately above that 02:15PM  
12 entry in the table, there's the command expression 02:15PM  
13 "router-id" that's not in the OSPFv3 context; correct? 02:15PM  
14 A Yes, I see that. 02:15PM  
15 Q And according to this document, at least, that 02:15PM  
16 command expression was authored or originated by 02:15PM  
17 someone -- Cisco and someone named James Gibson in 02:15PM  
18 around March of 1999. 02:15PM  
19 Do you see that? 02:15PM  
20 A Yes. 02:15PM  
21 MR. NEUKOM: Objection; document speaks for 02:15PM  
22 itself. 02:15PM  
23 BY MR. SILBERT: 02:15PM  
24 Q And do you know Mr. Gibson? 02:15PM  
25 A I know James, yes. 02:15PM

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1	Q Is he still at Cisco?	02:15PM
2	A I don't know for sure.	02:16PM
3	Q Okay. When you came up with a command expression	02:16PM
4	"router-id" in the OSPFv3 context, did you model it on	02:16PM
5	the pre-existing command expression "router-id"?	02:16PM
6	A Yes. That was our dominant reason for the	02:16PM
7	choice.	02:16PM
8	Q Okay. And router-id is a parameter that exists	02:16PM
9	in the OSPF standard; is that correct?	02:16PM
10	MR. NEUKOM: Objection; vague, calls for opinion.	02:16PM
11	THE WITNESS: Do you have anything you can point	02:16PM
12	to?	02:16PM
13	MR. SILBERT: Yeah.	02:16PM
14	Q Do you have Exhibit 56, the OSPF specification?	02:16PM
15	A Yeah. Yeah.	02:16PM
16	Q Can you look at the Bates page that -- the page	02:16PM
17	that ends in Bates No. 6 -- 602.	02:16PM
18	A 602, yes.	02:17PM
19	Q Do you see -- are you on that page?	02:17PM
20	A Yes, I am.	02:17PM
21	Q Do you see the bolded term "Router ID"?	02:17PM
22	A Yes, I see that.	02:17PM
23	Q And it says, "A 32-bit number assigned to each	02:17PM
24	router running the OSPF protocol," and then it goes on.	02:17PM
25	Do you see that?	02:17PM

HIGHLY CONFIDENTIAL- ATTORNEYS' EYES ONLY

1 A Yeah, I see that. 02:17PM

2 Q And the command "router-id," is that implementing 02:17PM

3 the same feature that's described in the OSPF 02:17PM

4 specification as "Router ID"? 02:17PM

5 A Yes. The router, dash -- router, hyphen, id 02:17PM

6 implements the functionality provided by the router, 02:17PM

7 space, ID in this RFC. 02:18PM

8 Q Okay. Okay. Let's go to page 30 of Exhibit 54. 02:18PM

9 Do you see, on the lower half of the page, the 02:18PM

10 command expression "show ipv6 interface"? 02:18PM

11 A Yes, I do. 02:18PM

12 Q And did you come up with that command expression 02:18PM

13 in around June of 2001? 02:19PM

14 A Would you have a copy of the document which is in 02:19PM

15 the next row, the 112494? 02:19PM

16 MR. SILBERT: In the next row. We may. 02:19PM

17 Do you want to look, Lizzie? It would be in that 02:19PM

18 box. No, he's talking about the next row down. It 02:19PM

19 would have the Bates numbers that end at 769 on the last 02:19PM

20 page. 02:19PM

21 Q We can look, but are you questioning the date? 02:19PM

22 Is that the reason you're -- 02:19PM

23 A The date is fine. I was expecting the same ENG 02:20PM

24 number up here also. If it is missing, I don't know why 02:20PM

25 it's missing. 02:20PM

HIGHLY CONFIDENTIAL- ATTORNEYS' EYES ONLY

1 Q Do you mean for the -- 02:20PM  
2 A The whole -- the whole "show ipv6 ospf" is all 02:20PM  
3 sort of done together as part of that project, and I was 02:20PM  
4 expecting that to show the same ENG number. 02:20PM  
5 Q Okay. So as you sit here today, do you not know 02:20PM  
6 whether you came up with the command expression "show 02:20PM  
7 ipv6 ospf" or not? 02:20PM  
8 A So the whole "show IPv6 ospf" and all 02:20PM  
9 sub-commands under that, all of that I came up with. 02:20PM  
10 Q Okay. You are just questioning whether there 02:20PM  
11 should be a different document listed in the -- 02:20PM  
12 A I was expecting -- 02:20PM  
13 Q -- document column? 02:20PM  
14 A -- that same document pointing -- 02:20PM  
15 Q Okay. 02:20PM  
16 A -- and that's throwing me off a bit. 02:20PM  
17 Q Okay. And do you believe you came up with that 02:20PM  
18 command "show ipv6 ospf" sometime in 2001, around 02:21PM  
19 June 2001? 02:21PM  
20 A In 2001. 02:21PM  
21 Q Okay. 02:21PM  
22 A Somewhere, yeah. 02:21PM  
23 Q And -- 02:21PM  
24 MR. NEUKOM: David, we have a copy of that 02:21PM  
25 document, if you would like it. 02:21PM

1	MR. SILBERT: Okay.	02:21PM
2	MR. NEUKOM: We've got -- again, I don't want to	02:21PM
3	get in the way of your deposition.	02:21PM
4	MR. SILBERT: Okay.	02:21PM
5	MR. NEUKOM: If you don't want it, no worries,	02:21PM
6	but I think we have got three copies of -- of that	02:21PM
7	document, so if you want it at some point, just let us	02:21PM
8	know.	02:21PM
9	MR. SILBERT: Okay. Thanks. I'm not sure it's	02:21PM
10	critical at this point, so it might -- as I understand	02:21PM
11	Mr. Roy, it might merit a revision to Exhibit F, but --	02:21PM
12	no, she's shaking her head. Okay.	02:21PM
13	Q The -- when you came up with the command "show	02:21PM
14	ipv6 ospf," did you model it on a pre-existing command	02:21PM
15	"show ip ospf"?	02:21PM
16	A Yes. That was, again, the dominant choice.	02:22PM
17	Q Okay. And so, again, what you did with respect	02:22PM
18	to this command, "show ipv6 ospf," is take the existing	02:22PM
19	command and change "ip" to "ipv6"; is that right?	02:22PM
20	A Basically, we have multiple choices when we are	02:22PM
21	part of the project. We could have done things like	02:22PM
22	"show ospfv3" or show any other variant of it. We ended	02:22PM
23	up choosing "show ipv6 ospf," so anything related to	02:22PM
24	OSPF Version 3, we tried to stick to the same IPv6 OSPF	02:22PM
25	construct everywhere. This is a "show" command stuff.	02:22PM

HIGHLY CONFIDENTIAL- ATTORNEYS' EYES ONLY

1       What you were looking at earlier was configuration, and, 02:22PM  
2       again, consistency is -- is quite important, so you want 02:22PM  
3       to keep one theme all across all of the place. 02:22PM  
4           Q   And in -- "ipv6" in the command "show ipv6 ospf" 02:23PM  
5       refers to Internet Protocol Version 6 as specified by 02:23PM  
6       the IETF? 02:23PM  
7           A   That is correct. 02:23PM  
8           Q   And "ospf" in the command "show ipv6 ospf" refers 02:23PM  
9       to OSPF Version 3 as specified by IETF? 02:23PM  
10          A   In the context OSPF, "ospf" refers to the OSPF 02:23PM  
11       Version 3 spec RFC in the IETF, yes. 02:23PM  
12          Q   Okay. And when you came up with this command 02:23PM  
13       expression, Cisco already used commands with the syntax 02:23PM  
14       "show" blank; correct? 02:23PM  
15          A   The top-level keyword "show" pre-existed at that 02:23PM  
16       point, yes. 02:24PM  
17          Q   And before you joined Cisco, were you familiar 02:24PM  
18       with other companies who use CLI commands that included 02:24PM  
19       a top-level keyword "show"? 02:24PM  
20           MR. NEUKOM: Objection; vague and compound. 02:24PM  
21           THE WITNESS: And I don't recall studying CLI of 02:24PM  
22       various companies before I came to Cisco, and that was 02:24PM  
23       already almost 20 years ago, in '96. 02:24PM  
24       BY MR. SILBERT: 02:24PM  
25           Q   Going back to the '80s, did you use CLIs in the 02:24PM

1	'80s?	02:24PM
2	A So in my -- in my -- you are referring to my	02:24PM
3	previous work or my knowledge of the industry or?	02:24PM
4	Q In your life.	02:25PM
5	MR. NEUKOM: Same objections -- oh, never mind.	02:25PM
6	Sorry, different question. No objection to the current	02:25PM
7	question.	02:25PM
8	THE WITNESS: Before Cisco, I don't recall any	02:25PM
9	specific CLIs I have developed. I may have, but, again,	02:25PM
10	this is so old, that I don't have any specific memory of	02:25PM
11	anything.	02:25PM
12	BY MR. SILBERT:	02:25PM
13	Q Okay. And to be clear, I'm not asking you about	02:25PM
14	CLIs that you developed on; I'm asking you about any	02:25PM
15	CLIs that you might have used.	02:25PM
16	A Again, I can't remember any specific CLI I have	02:25PM
17	used anywhere. Now, I have used programs like	02:26PM
18	Windows 95 way back when, and, yes, there are commands	02:26PM
19	you could type on a prompt. That I'm aware of, and,	02:26PM
20	yes, I have used, if that's what you are asking.	02:26PM
21	Q Okay. And do you recall using CLI	02:26PM
22	commands -- strike that.	02:26PM
23	Do you recall using, prior to the time you joined	02:26PM
24	Cisco, CLI commands that use the word "show" as the	02:26PM
25	top-level keyword?	02:26PM